CLAIMS

1.   A method for modifying data transferred from a source to a destination, the method comprising the steps of:

generating one or more commands wherein each command is associated with an operation to modify the data;

placing the commands in a data structure; and

performing the operations associated with the commands contained in the data structure to modify the data as directed by the commands as the data is transferred from the source to the destination.

2.   A method as defined in claim 1 further comprising the step of:

acquiring the data from the source.

3.   A method as defined in claim 2 further comprising the steps of:

generating a bit mask associated with the acquired data; and

transferring the bit mask and the acquired data to the destination.

4.   A method as defined in claim 2 wherein the data structure comprises one or more entries wherein each entry is associated with a command and the entry contains information associated with a range of addresses and an operation code that are associated with the command.

5.   A method as defined in claim 4 further comprising the step of:

searching the data structure for an entry containing information associated with a range of addresses that matches a range of addresses associated with the acquired data;

if a matching entry is found, determining if an operation code contained in the matching entry indicates a delete data operation; and

if so, generating a delete bit mask that represents data that is deleted in the acquired data and transferring the delete bit mask and the acquired data to the destination.

6. A method as defined in claim 4 comprising the steps of:

searching the data structure for an entry containing information associated with a range of addresses that matches a range of addresses associated with the acquired data;

if a matching entry is found, determining if an operation code contained in a matching entry indicates an insert data operation; and if so,

a) generating a leading bit mask that represents leading data contained in the acquired data,

b) transferring the leading bit mask and the acquired data to the destination,

c) acquiring insert data,

d) generating an insert data bit mask that represents the insert data,

e) transferring the insert data bit mask and the insert data to the destination,

f) generating a lagging bit mask that represents lagging data contained in the acquired data, and

g) transferring the lagging bit mask and the acquired data to the destination.

7. A method as defined in claim 4 wherein each entry contains a length and a source address associated with the command.

8. A method as defined in claim 7 comprising the step of:

searching the data structure for an entry containing information associated with a range of addresses specified by the combination of the length and the source address contained in the entry that matches a range of addresses associated with the acquired data.

9. A method as defined in claim 1 wherein the data structure is a table.

10. A method as defined in claim 1 comprising the step of:

clearing the data structure.

11. A method as defined in claim 1 wherein the source is a context memory.

12. A method as defined in claim 1 wherein the destination is an output buffer.

13. A system comprising:

a context memory configured to hold data;

a data structure configured to hold one or more commands;

a processor configured to generate one or more commands to modify the data and place the commands in the data structure;

an output buffer; and

a data mover coupled to the context memory and the output buffer and configured to acquire the data from the context memory, modify the data as directed by the commands contained in the data structure, and transfer the modified data to the output buffer.

14. A system as defined in claim 13 wherein the data structure is a table.

15. A system as defined in claim 13 wherein the data structure comprises one or more entries wherein each entry is associated with a command and the entry contains information associated with a range of addresses and an operation code that are associated with the command.

16. A system as defined in claim 15 wherein the data mover is configured to search the data structure for an entry containing information associated with a range of addresses that matches a range of addresses associated with the acquired data and if a matching entry is found, determine if the operation code contained in the matching entry indicates a delete data operation and, if so, generate a delete bit mask that represents data that is deleted in the acquired data.

17. A system as defined in claim 15 wherein the data mover is configured to search the data structure for an entry containing information associated with a range of addresses

3   that matches a range of addresses associated with the acquired data and if a matching en-

4   try is found, determine if the operation code contained in the matching entry indicates an

5   insert data operation and if so, (i) generate a leading bit mask that represents leading data

6   contained in the acquired data, (ii) transfer the leading bit mask and acquired data to the

7   destination, (iii) acquire insert data, (iv) generate an insert data bit mask that represents

8   the insert data, (v) transfer the insert data bit mask and insert data to the destination, (vi)

9   generate a lagging bit mask that represents lagging data contained in the acquired data,

10   and (vii) transfer the lagging bit mask and the acquired data to the destination.

1   18.   A system as defined in claim 15 wherein each entry in the data structure contains

2   a length and a source address associated with the command.

1   19.   A system as defined in claim 18 wherein the data mover is configured to search

2   the data structure for an entry containing information associated with a range of addresses

3   specified by the combination of the length and the source address contained in the entry

4   that matches a range of addresses associated with the acquired data.

1   20.   A system as defined in claim 13 wherein the data mover is configured to generate

2   a bit mask associated with the data and transfer the bit mask to the output buffer.

1   21.   A system as defined in claim 20 wherein the output buffer comprises:

2   data steering logic configured to use the bit mask to identify valid data contained

3   in the transferred data;

4   a working register coupled to the data steering logic and configured to hold the

5   valid data transferred from the data steering logic; and

6   an output queue coupled to the working register and configured to hold the valid

7   data transferred from the working register.

1   22.   An apparatus for modifying data transferred from a source to a destination, the

2   apparatus comprising:

3 means for generating one or more commands wherein each command is associ-

4 ated with an operation to modify the data;

5 means for placing the commands in a data structure; and

6 means for performing the operations associated with the commands contained in

7 the data structure to modify the data as directed by the commands as the data is trans-

8 ferred from the source to the destination.

1 23. An apparatus as defined in claim 22 comprising:

2 means for acquiring the data from the source.

1 24. An apparatus as defined in claim 23 comprising:

2 means for generating a bit mask associated with the acquired data; and

3 transferring the bit mask and the acquired data to the destination.

1 25. An apparatus as defined in claim 23 wherein the data structure comprises one or

2 more entries wherein each entry is associated with a command and the entry contains in-

3 formation associated with a range of addresses and an operation code that are associated

4 with the command.

1 26. An apparatus as defined in claim 25 comprising:

2 means for searching the data structure for an entry containing information associ-

3 ated with a range of addresses that matches a range of addresses associated with the ac-

4 quired data;

5 means for determining if the operation code contained in a matching entry indi-

6 cates a delete data operation; and

7 means for generating a delete bit mask that represents data that is deleted in the

8 acquired data and transferring the delete bit mask and the acquired data to the destination,

9 if the operation code in the matching entry indicates a delete data operation.

1 27. An apparatus as defined in claim 25 comprising:

2   means for searching the data structure for an entry containing information associ-

3   ated with a range of addresses that matches a range of addresses associated with the ac-

4   quired data;

5   means for determining if the operation code contained in a matching entry indi-

6   cates an insert data operation; and

7   means for (i) generating a leading bit mask that represents leading data contained

8   in the acquired data, (ii) transferring the leading bit mask and the acquired data to the

9   destination, (iii) acquiring insert data, (iv) generating an insert data bit mask that repre-

10   sents the insert data, (v) transferring the insert data bit mask and the insert data to the

11   destination, (vi) generating a lagging bit mask that represents lagging data contained in

12   the acquired data, and (vii) transferring the lagging bit mask and the acquired data to the

13   destination, if the operation code indicates an insert data operation.

1   28.   A computer readable medium comprising computer executable instructions for

2   execution in a processor for:

3   generating one or more commands wherein each command is associated with an

4   operation to modify data;

5   placing the commands in a data structure; and

6   performing the operations associated with the commands contained in the struc-

7   ture to modify the data as directed by the commands as the data is transferred from the

8   source to the destination.

1   29.   A computer readable medium as defined in claim 28 comprising computer ex-

2   ecutable instructions for execution in a processor for:

3   acquiring the data from the source.

1   30.   A computer readable medium as defined in claim 29 comprising computer ex-

2   ecutable instructions for execution in a processor for:

3   generating a bit mask associated with the acquired data; and

4   transferring the bit mask and the acquired data to the destination.

1   31.   A computer readable medium as defined in claim 29 wherein the data structure

2   comprises one or more entries wherein each entry is associated with a command and

3   contains information associated with a range of addresses and an operation code that are

4   associated with the command.

1   32.   A computer readable medium as defined in claim 31 comprising computer ex-

2   ecutable instructions for execution in a processor for:

3   searching the data structure for an entry containing information associated with a

4   range of addresses that matches a range of addresses associated with the acquired data;

5   if a matching entry is found, determining if an operation code contained in the

6   matching entry indicates a delete data operation; and

7   if so, generating a delete bit mask that represents data that is deleted in the ac-

8   quired data and transferring the delete bit mask and the acquired data to the destination.

1   33.   A computer readable medium as defined in claim 31 comprising computer ex-

2   ecutable instructions for execution in a processor for:

3   searching the data structure for an entry containing information associated with a

4   range of addresses that matches a range of addresses associated with the acquired data;

5   if a matching entry is found, determining if an operation code contained in a

6   matching entry indicates an insert data operation; and if so,

7   a) generating a leading bit mask that represents leading data contained in

8   the acquired data,

9   b) transferring the leading bit mask and the acquired data to the destina-

10   tion,

11   c) acquiring insert data,

12   d) generating an insert data bit mask that represents the insert data,

13   e) transferring the insert data bit mask and the insert data to the destina-

14   tion,

15   f) generating a lagging bit mask that represents lagging data contained in

16   the acquired data, and

17   g) transferring the lagging bit mask and the acquired data to the

18   destination.